

Agricultural Impacts Analysis of Proposals to Increase Flooding in the Yolo Bypass for Juvenile Salmon and Other Fish Species

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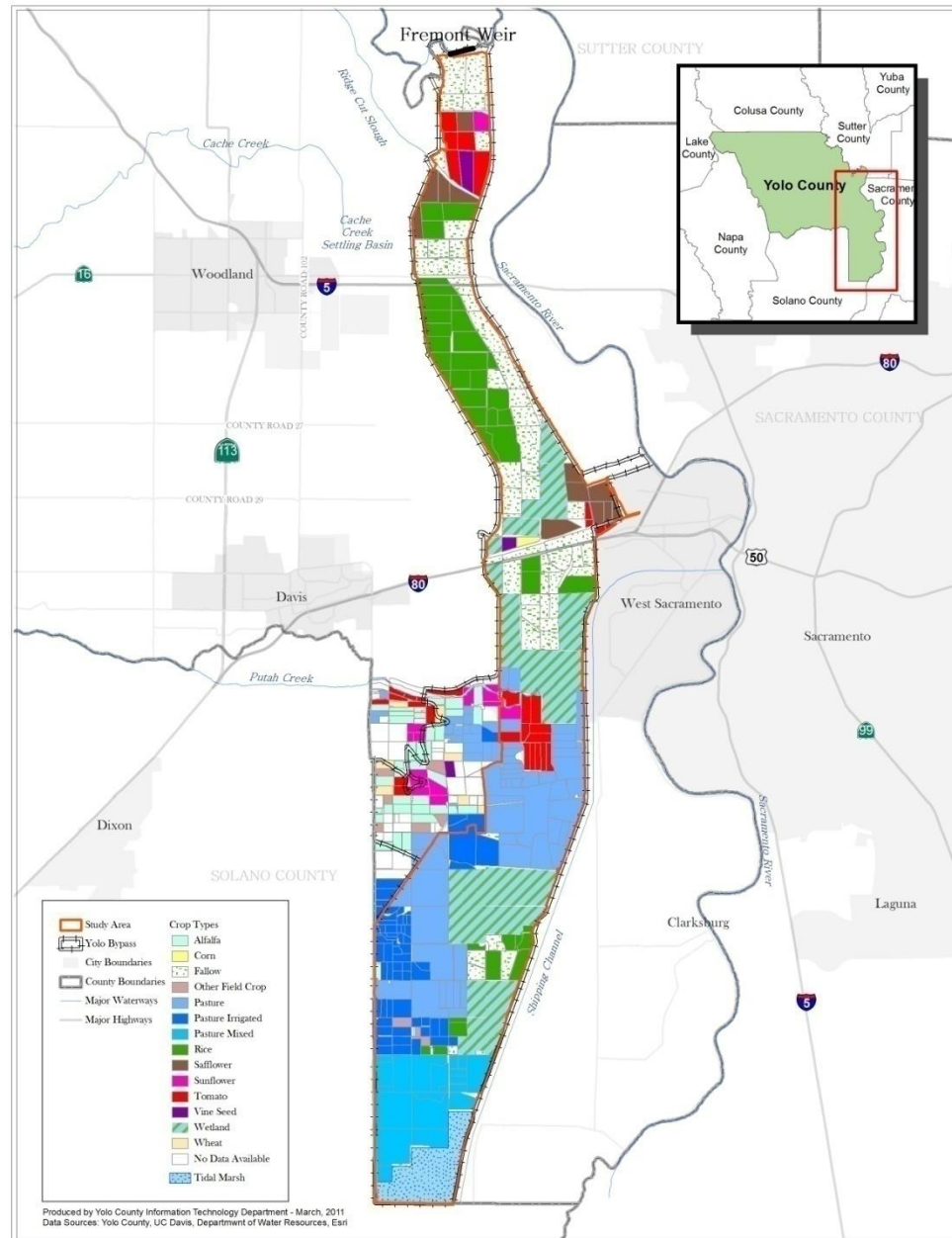
Why Yolo Agricultural Losses Matter

- History
 - Long-standing policy to preserve agriculture
 - Financial sacrifices
- Local economy losses
 - Direct
 - Indirect
- Flood management

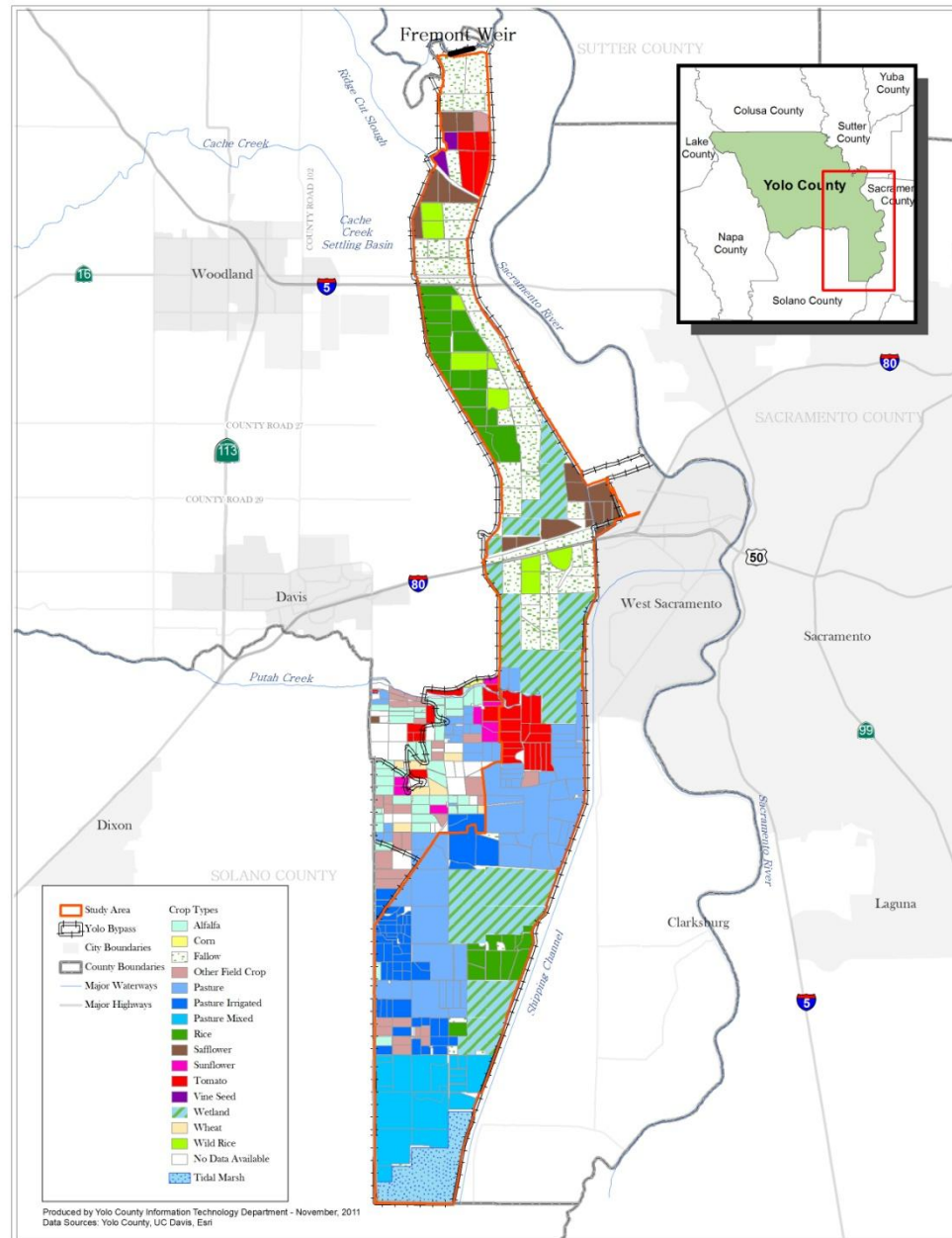
Scenarios

- 2 proposals to increase Yolo Bypass flooding:
 - BDCP Conservation Measure 2
 - Biological Opinion Reasonable and Prudent Alternative
- 5 flooding end dates for Biological Opinion scenarios: February 15th, March 24th, April 10th, April 30th, May 15th
- 1 BDCP Conservation Measure 2 scenario: No dry year flooding and 30-day natural flooding extension
- 2 flow rates: 3,000 cfs and 6,000 cfs

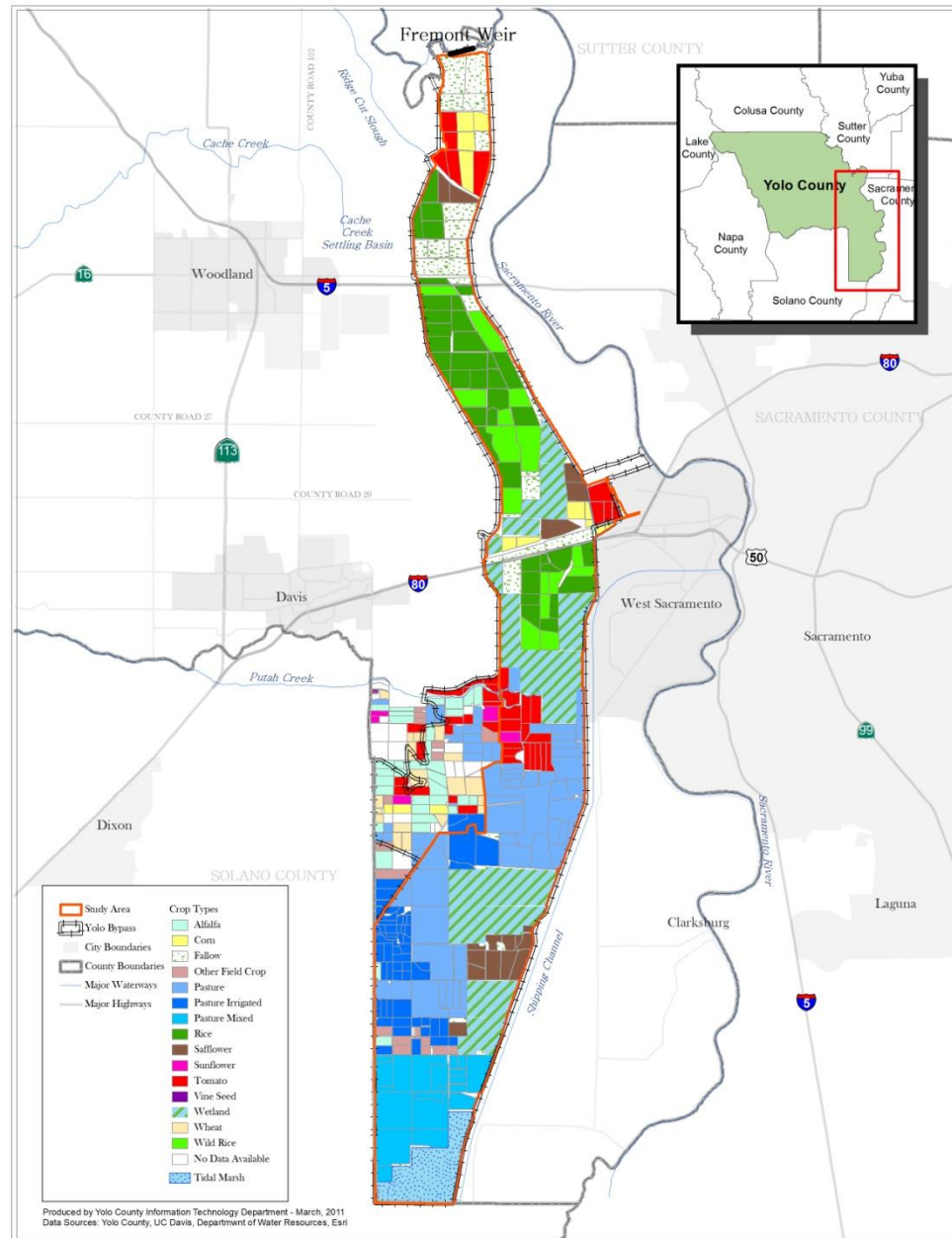
Yolo Bypass Crops - 2005



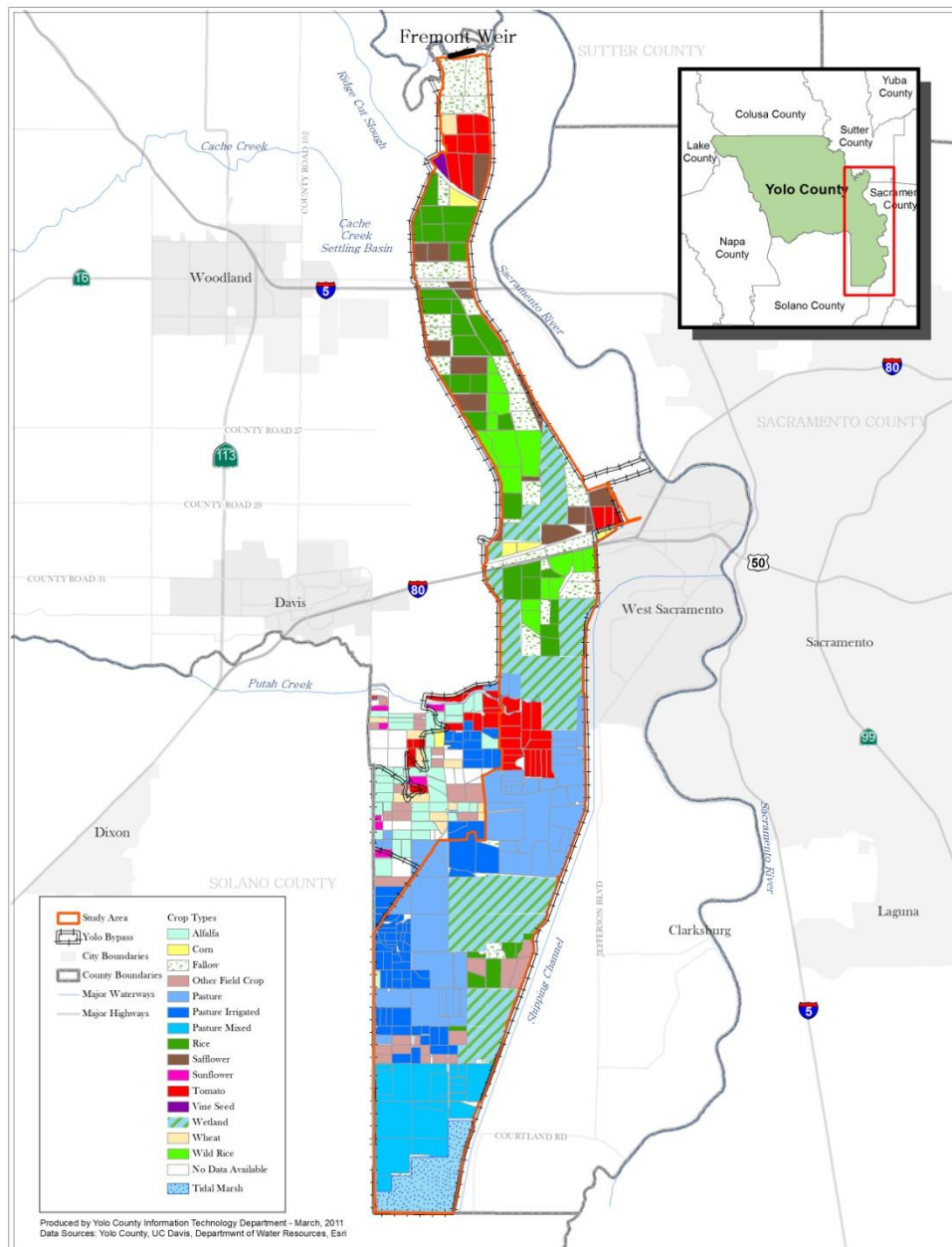
Yolo Bypass Crops - 2006



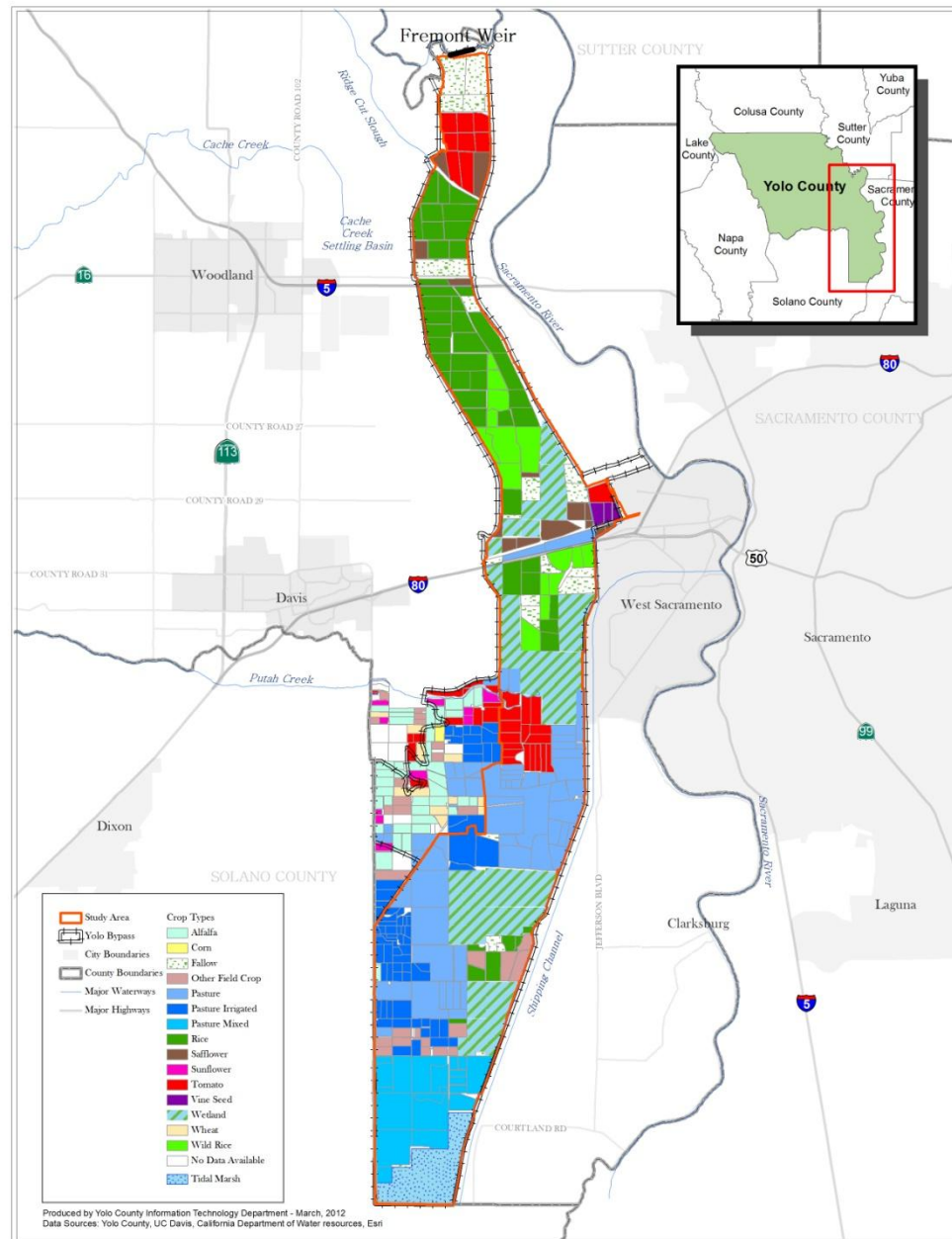
Yolo Bypass Crops - 2007



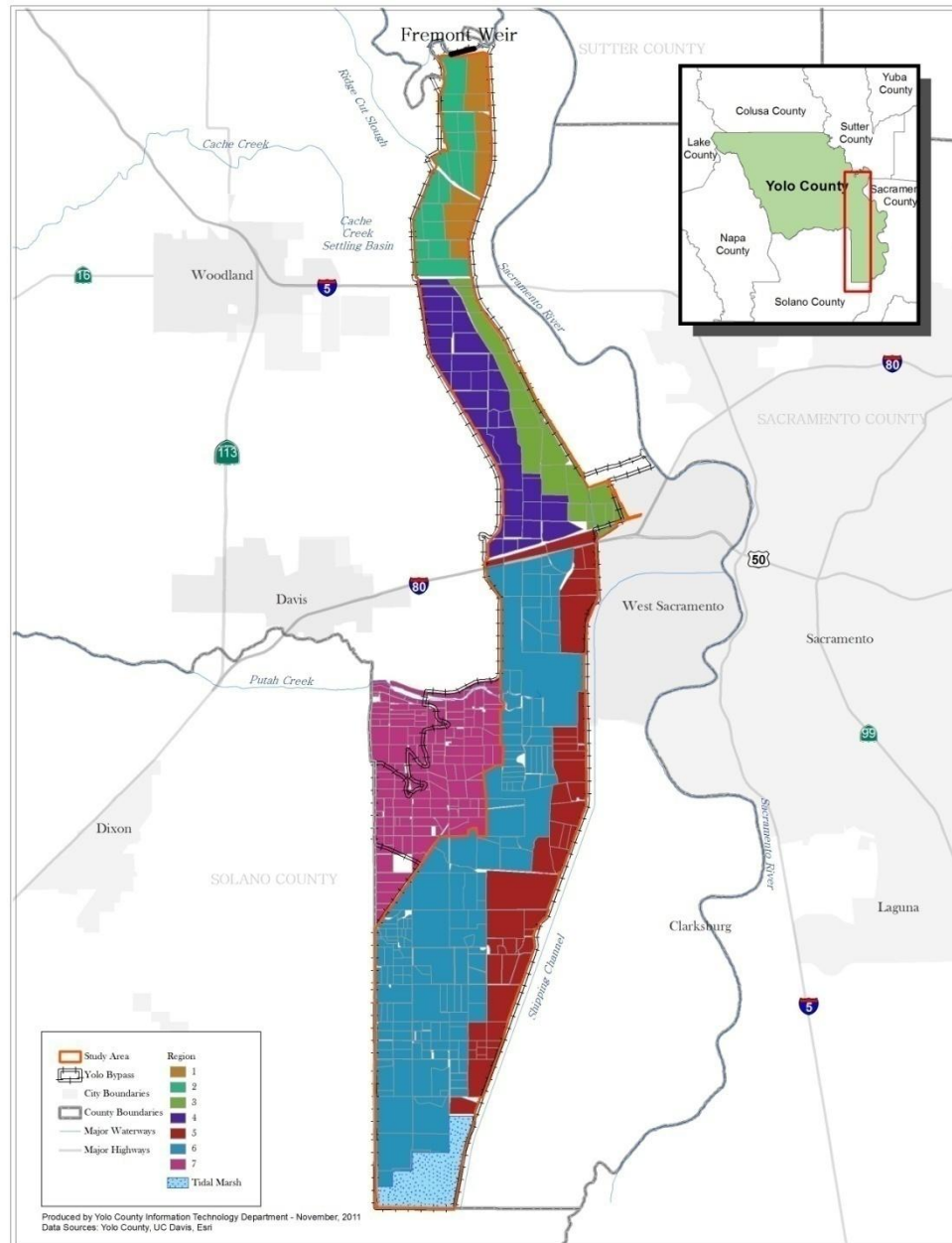
Yolo Bypass Crops - 2008



Yolo Bypass Crops - 2009



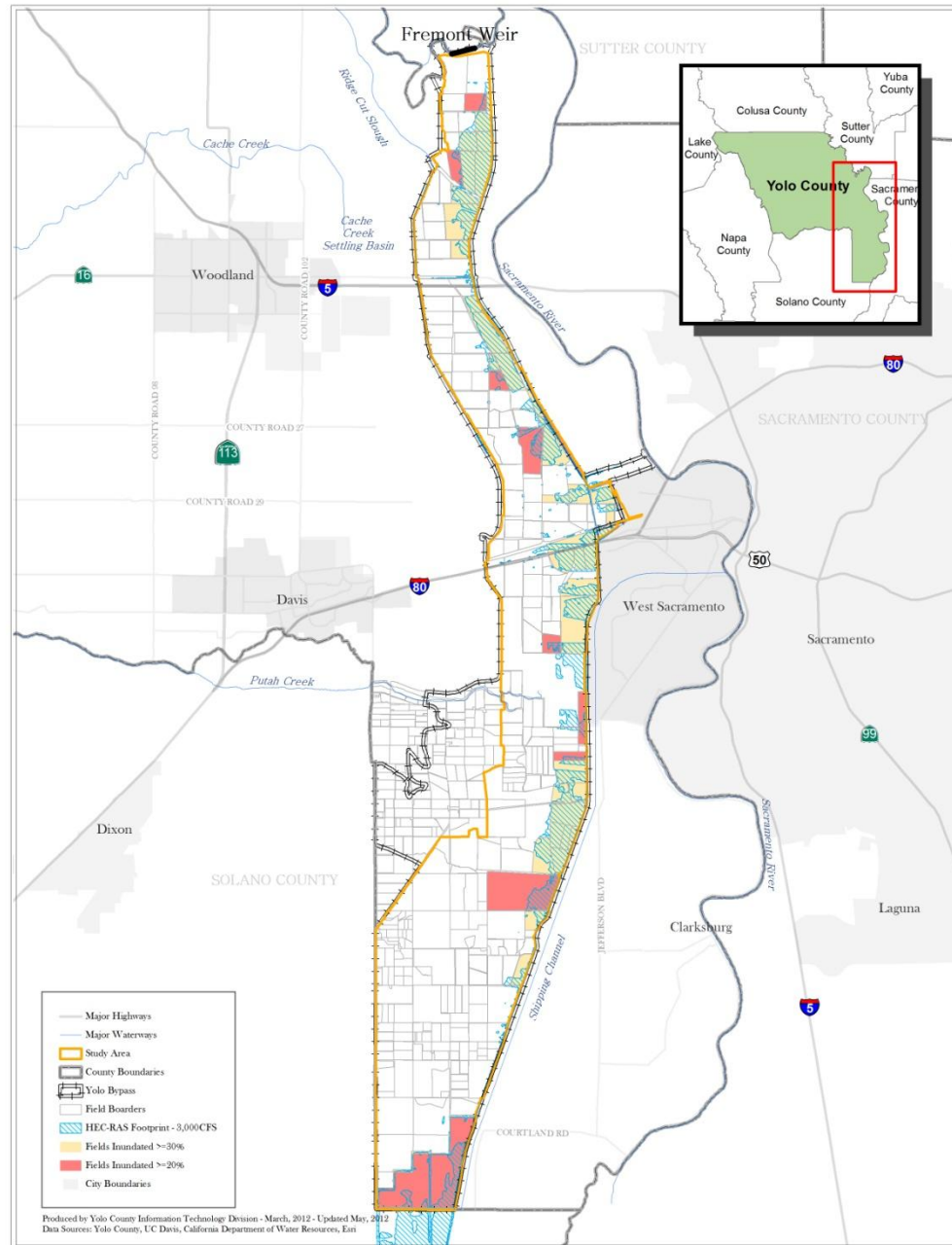
Yolo Bypass Subregions



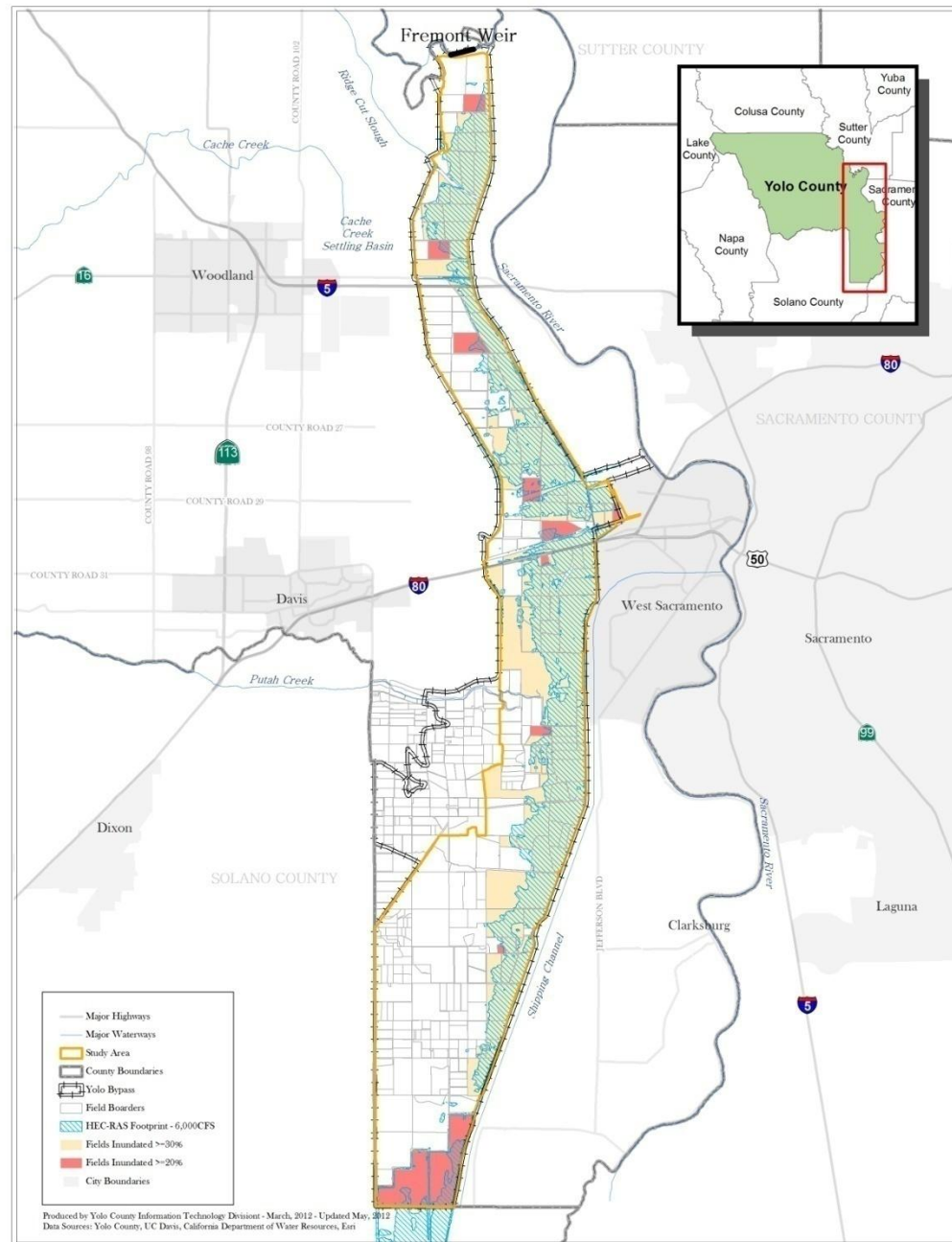
Average Rice Yield by Region & Flooding Date (tons per acre)

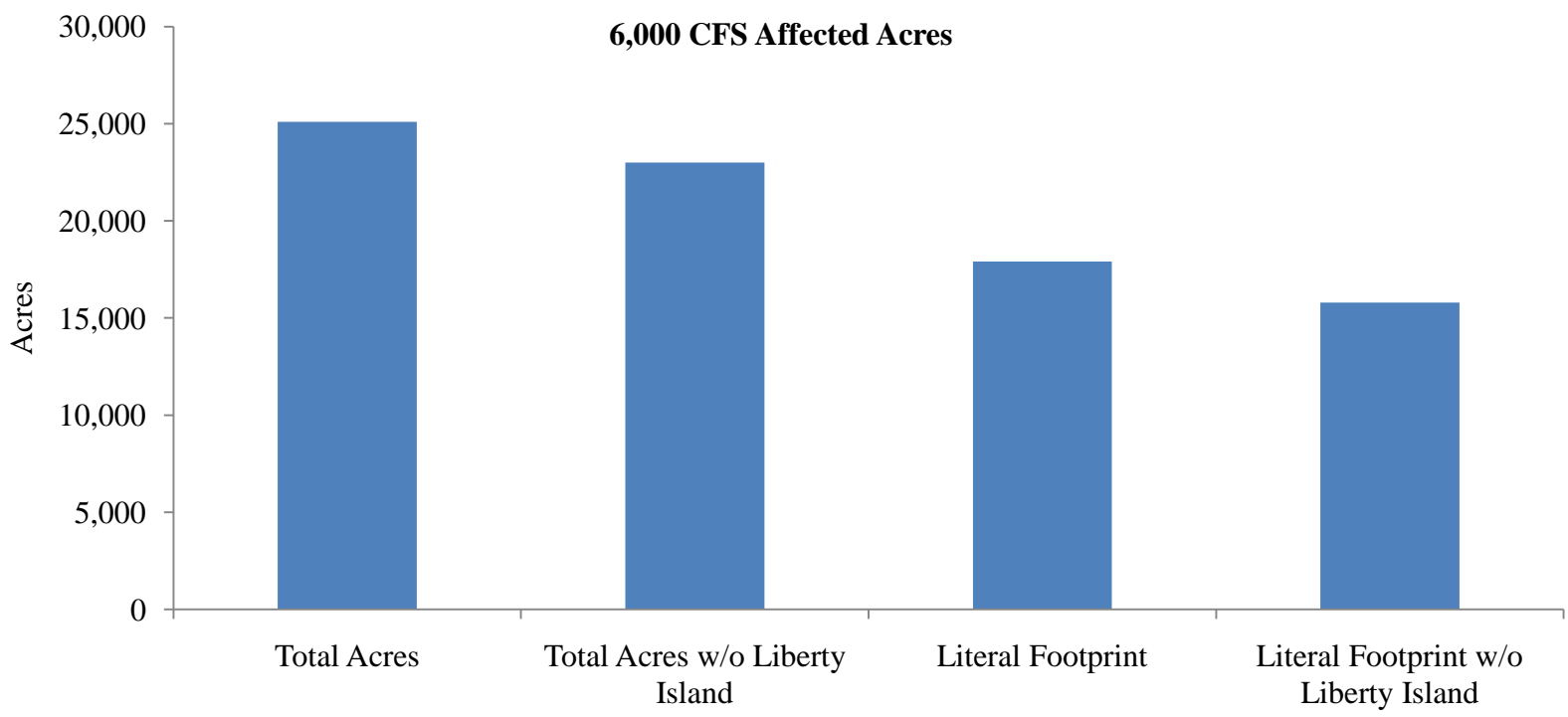
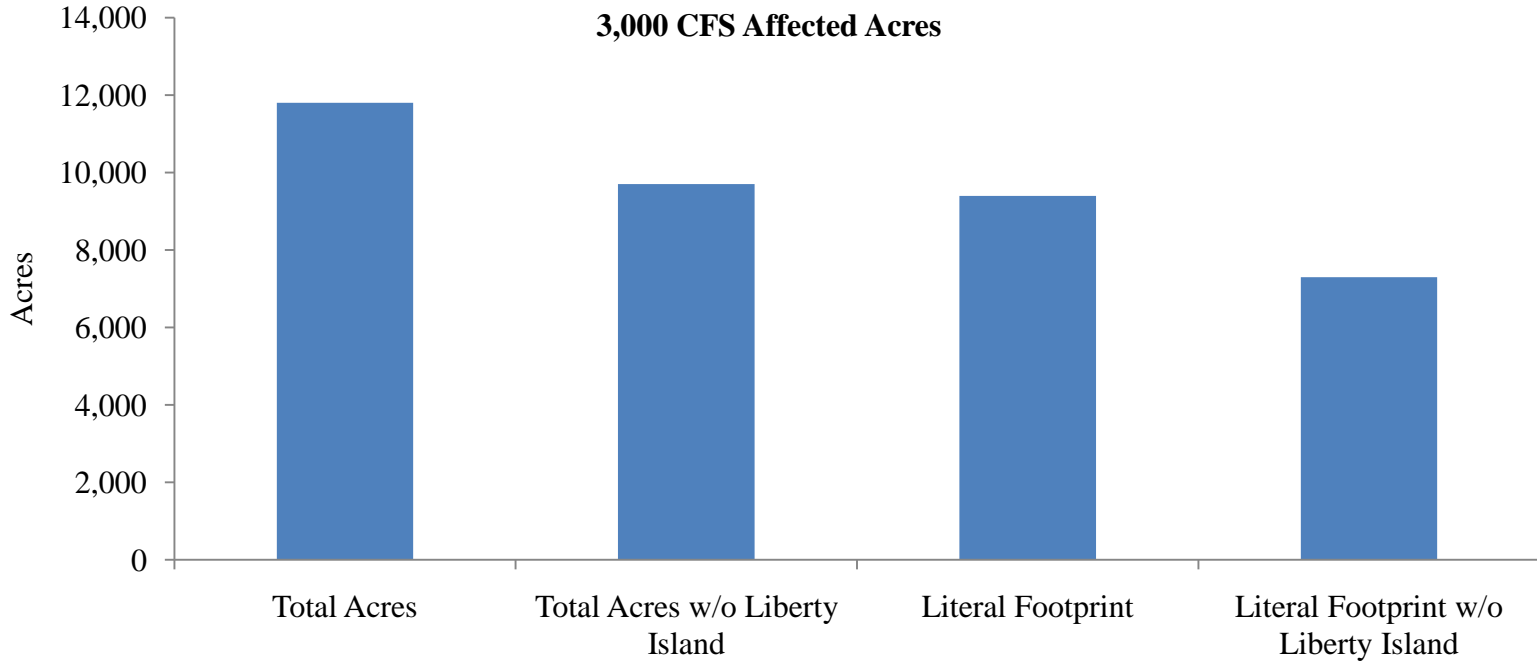
Region	Feb 15	Mar 24	Apr 10	May 15
1	4.14	3.19	1.08	0.01
2	4.15	3.98	2.88	0.09
3	4.15	3.20	1.09	0.01
4	4.12	3.92	2.76	0.09
5	3.66	2.50	1.14	0.07
6	3.74	3.42	2.41	0.21

Field Inundation – 3,000 Cubic Feet per Second

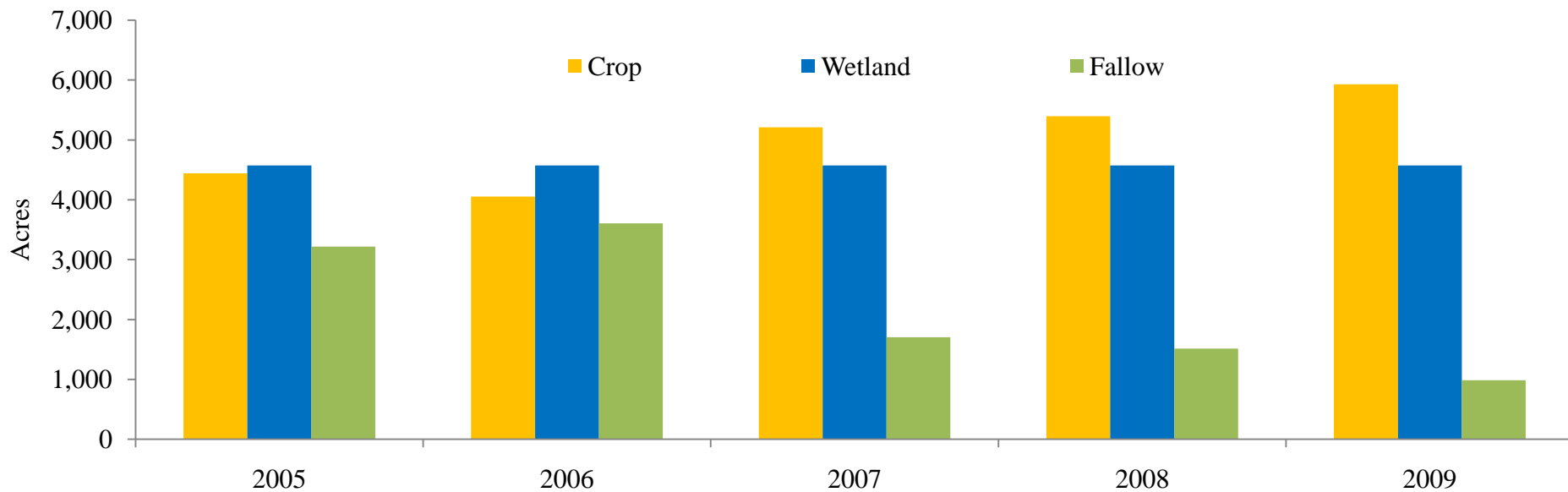


Field Inundation – 6,000 Cubic Feet per Second

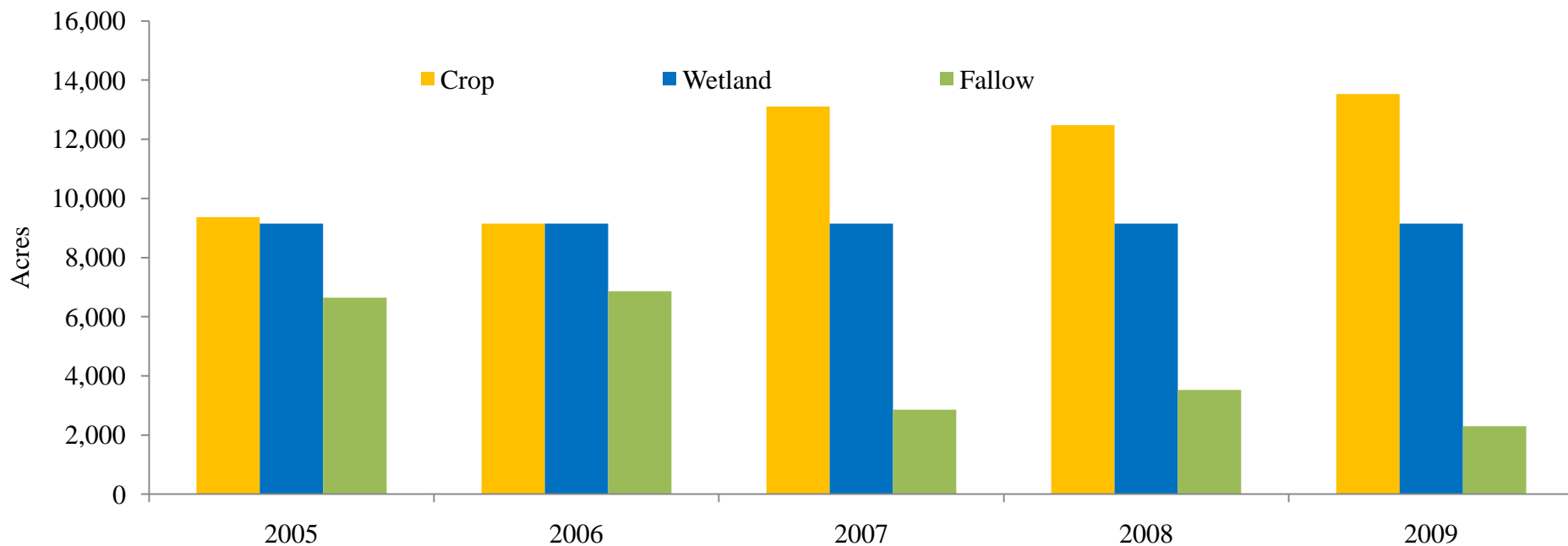




Affected Acres with 3,000 CFS



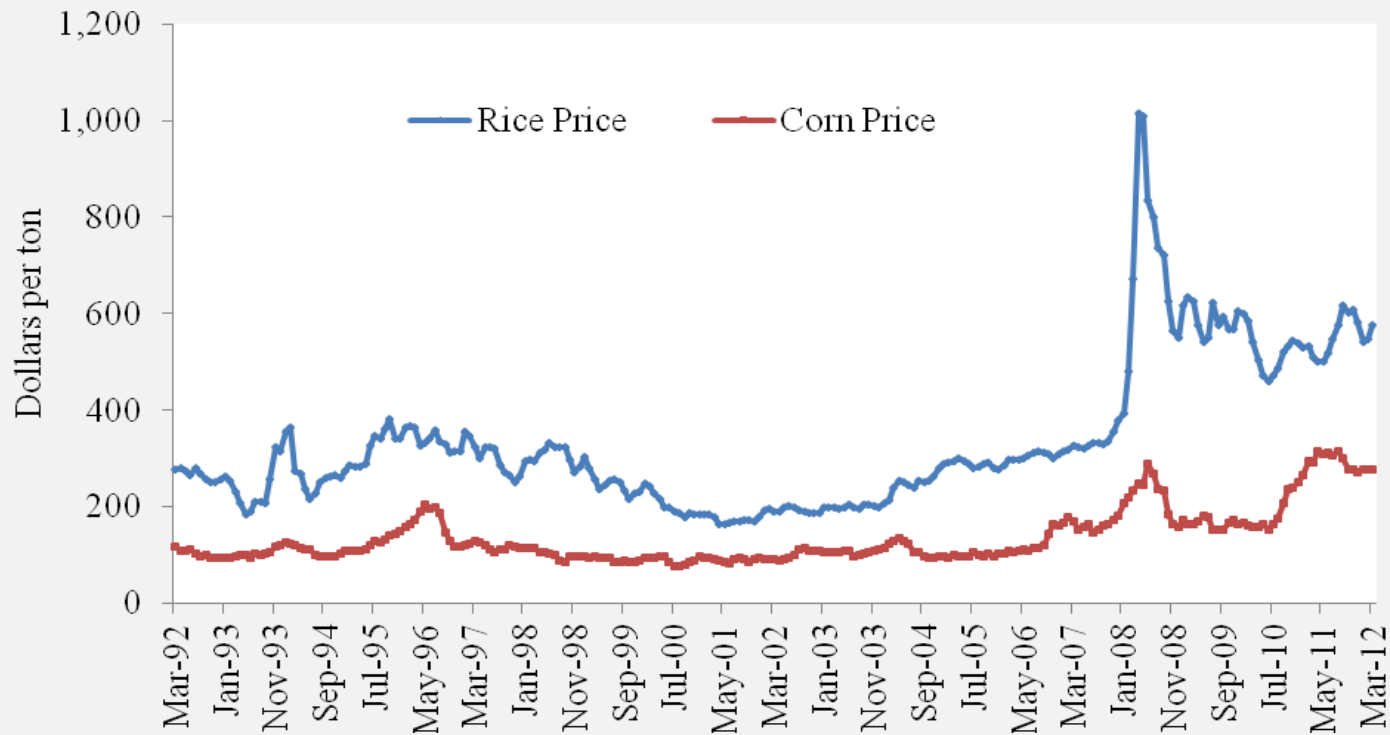
Affected Acres with 6,000 CFS



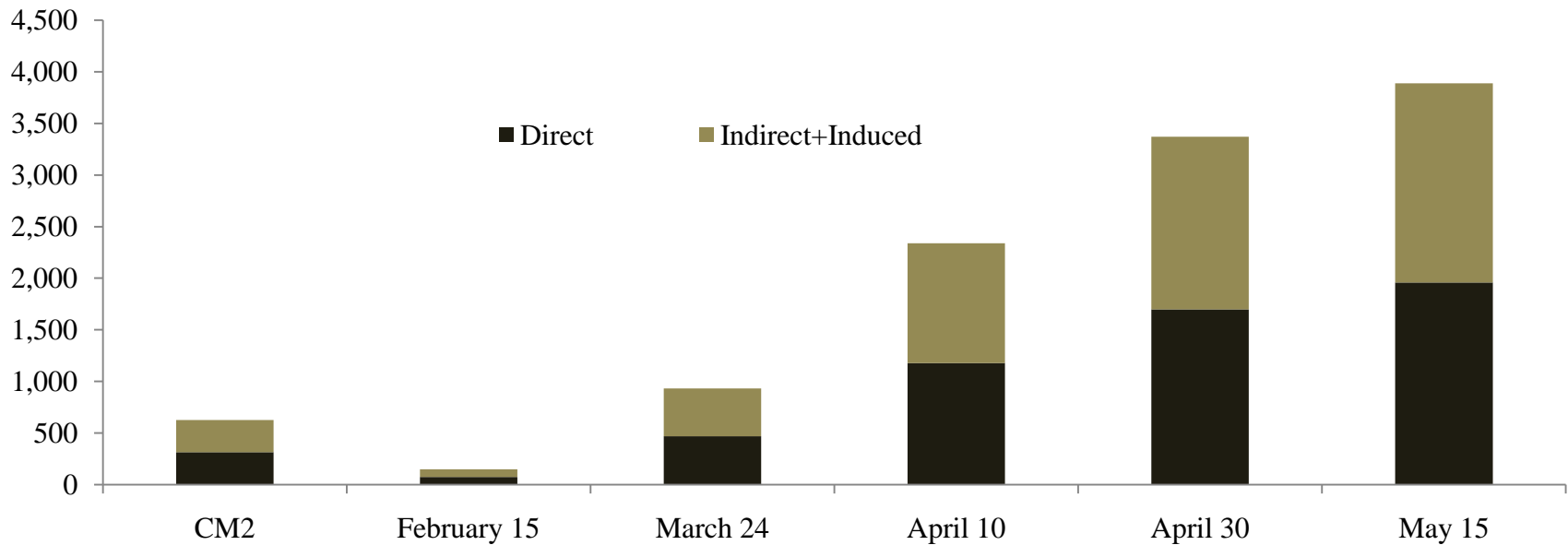
“Natural” Flooding

- Analysis accounts for natural flooding
- Weir overtopped in 15 of the 26 years
- End date range: January 10 to May 24
- Variation in flooding patterns
 - Example: Overtopping for only 3 days ending May 24 in 2005
 - Example: Almost continuous overtopping through May 5 in 2006

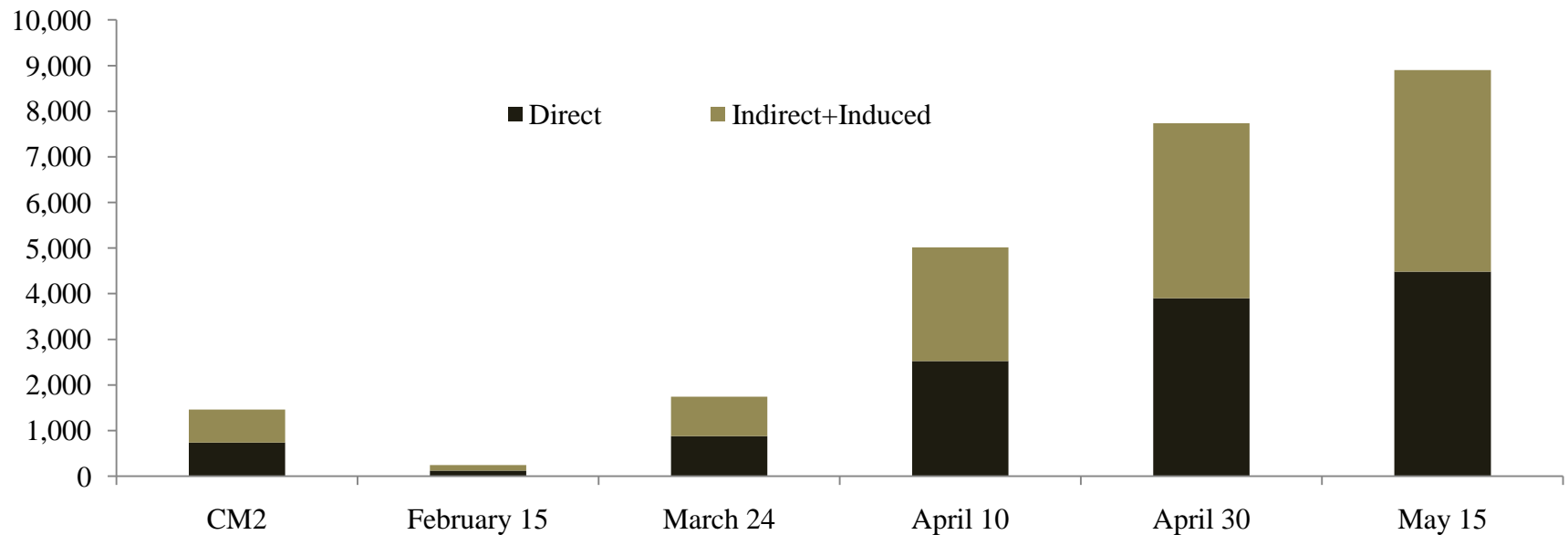
Rice and Corn Prices: 1992-2012



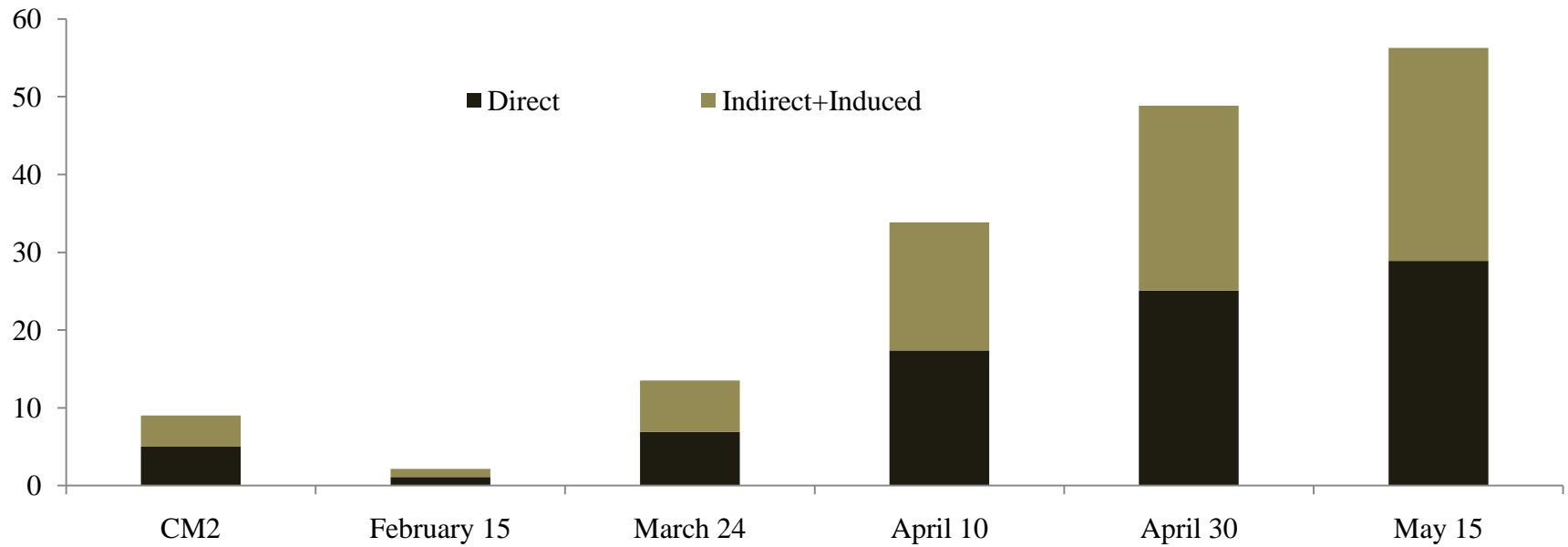
Value Added Losses with 3,000 cfs (in thousands)



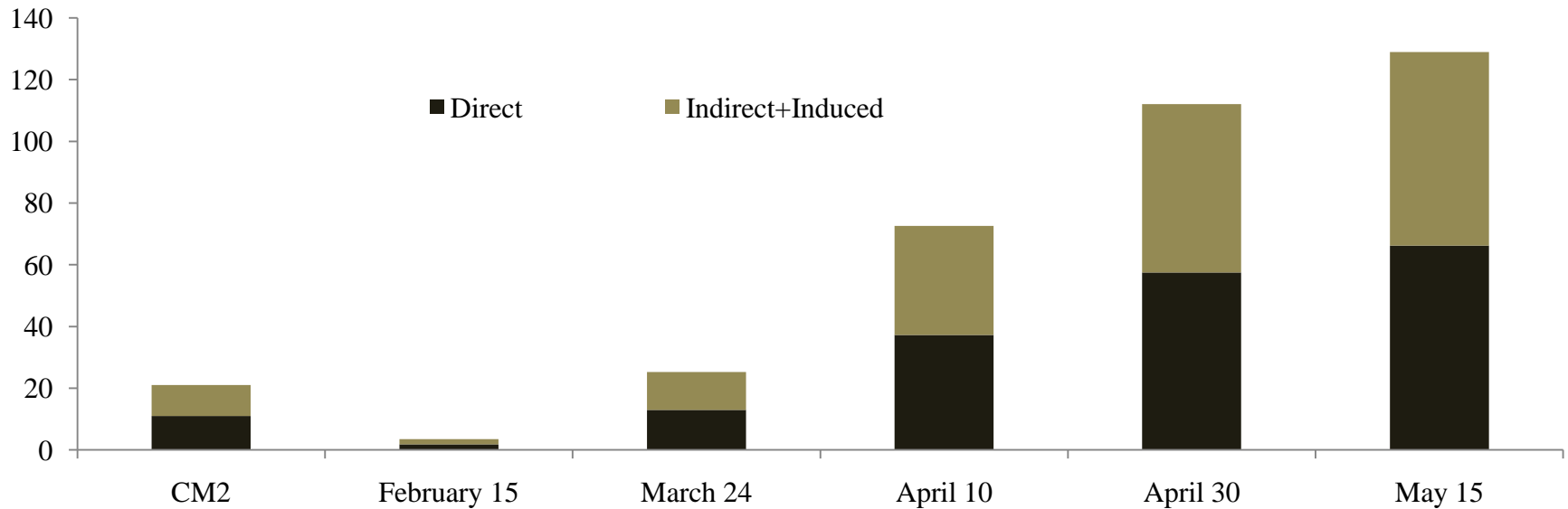
Value Added Losses with 6,000 cfs (in thousands)



Job Losses with 3,000 cfs



Job Losses with 6,000 cfs



Conclusion

- The model framework is flexible and can be used to evaluate future Yolo Bypass proposals
- Many variables influence farmers' decisions to plant crops if managed flooding is proposed
- Later flooding translates into increased losses
- Avoidance of flooding during dry years significantly reduces losses
- Unconstrained flooding has significantly higher losses than constrained flooding